Joint Biological Point Detection System (JBPDS)

The Joint Biological Point Detection System (JBPDS) is intended to provide early warning and identification of biological warfare agents to supported forces. It will provide biological agent point-detection, identification, and sampling capability for both fixed-site and mobile operations. The system is intended to detect biological agents in less than one minute and identify the agents in less than 15 minutes. The Block I version, scheduled for limited urgent fielding during FY03, is intended to identify ten agents. These ten agents are associated with Schedule A of International Task Force 6, representing agents that have been produced in significant quantities and weaponized by threat nations.

The capabilities of JBPDS will be used by each of the Services. The Army's JBPDS platform is the S788 lightweight multi-purpose shelter mounted on a High Mobility Multipurpose Wheeled Vehicle- Heavy Variant. For the Marine Corps, the JBPDS will be a component of the Joint Services Light Nuclear, Biological, and Chemical Reconnaissance Systems (JSLNBCRS). It will complement the nuclear and chemical detection and monitoring capabilities of the platform.

The Navy's JBPDS application will be permanently installed on naval surface combatant ships and at high priority shore installations worldwide. The Air Force JBPDS will be deployed in the M116A3 trailer or man-portable configuration for air base protection. Like the Marine Corps, the Air Force will also procure the JSLNBCRS (with JBPDS onboard) for defensive air base operations.

In December 1996, the Joint Program Manger for Biological Defense approved the Milestone II decision for JBPDS, and the system transitioned into the engineering and manufacturing development phase. JBPDS was placed under DOT&E oversight in January 2000. The Under Secretary of the Defense (Acquisition, Technology and Logistics) designated the entire Department of Defense Chemical Biological Defense Program, including JBPDS, as a Major Defense Acquisition Program in May 2002. In November 2002, the Under Secretary rescinded the Major Defense Acquisition Program designation, and the program is now an Acquisition Category 2 program.

TEST & EVALUATION ACTIVITY

In October 2000, the Joint Program Manager approved a two-phased, low-rate initial production strategy to fabricate nine systems to support Operational Assessment (OA2). He established specific performance entrance criteria for the operational assessment and detection, identification, and reliability entrance criteria for the Initial Operational Test and Evaluation (IOT&E). With a favorable assessment and recommendation from the Operational Test Agencies to proceed to IOT&E, the remaining 16 low-rate initial production systems needed for IOT&E were authorized. The Air Force Operational Test and Evaluation Center, the Army Test and Evaluation Command, and the Marine Corps Operational Test and Evaluation Activity conducted OA2 during September and October 2001. OA2 was conducted at Dugway Proving Ground using man-portable and shelter mounted JBPDSs in a ground scenario challenged by biological simulants. The Navy's Operational Test and Evaluation Force conducted a shipboard test of JBPDS against biological simulants in November 2001.

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In February 2002, the Army requested an urgent fielding of the JBPDS to upgrade the 310th Chemical Company Biological Integrated Detection System

(BIDS) due to the heightened threat to deployed forces. It also requested that an IOT&E be conducted with BIDS-JBPDS beginning in August 2002 using the 310th Chemical Company as the operational test unit. There are six phases of the IOT&E. Phase I is the Army's IOT&E at Dugway Proving Grounds. Phase II is an Air Force and Marine Corps IOT&E at Eglin Air Force Base in 2003. Phase III is a cold weather operations test at McKinley Laboratory, Eglin Air Force Base in 2003. Phase IV is the Navy IOT&E on board a U. S. Navy Ship in 2003. Phase V is a follow-on test to confirm that currently planned changes to the biological aerosol warning system (BAWS) and software have not degraded the performance of the JBPDS. Phase VI is planned, as necessary, to repeat the first three phases with production articles. Pursuant to the new strategy, the Army executed the first phase of the initial operational test from September to November 2002 to support the urgent fielding request to the 310th Chemical Company.

TEST & EVALUATION ASSESSMENT

JBPDS field test results from OA2 in September- October 2001, demonstrated that these systems met some, but not all detection, identification, and reliability requirements established in the Acquisition Decision Memorandum (ADM) of 2 October 2000. The shelter-mounted JBPDS configuration met the ADM criteria for detection of dry BG.[1] It did not meet the ADM criteria for identification of dry BG, nor for the detection or identification of wet BG. The man-portable JBPDS configuration met the ADM criteria for both the detection and identification of dry BG. It did not meet the ADM criteria for the detection and identification of wet BG. Further, the demonstrated detection performance of both the shelter-mounted and man-portable JBPDS units decreased rapidly with time and the system failed to meet reliability objectives established by the Operational Requirements Document. Since this operational assessment, changes have been made to the BAWS and other components to increase system durability and reliability. Multi-Service Operational Test and Evaluation (MOT&E) will use the final production-representative systems, as modified.

The developmental component-level testing of biological warfare agents has been accomplished with aerosol challenges against the BAWS and liquid-injection challenges against the identifier. These tests have established a tentative correlation between live biological warfare agents and simulants planned for MOT&E field releases. The BAWS and assay identifier as components do not adequately represent the whole system including the collector and fluid transfer system. An adequate evaluation of the system will be based on the performance of the whole system tested in a chamber against live biological warfare agents. The whole system test will also include the determination of agent viability after the sample is collected from the system, transported, and delivered to a theater medical laboratory for analysis.

Phase 1 of the IOT&E was completed in November 2002. Analysis of the data is not complete at this time. Results will be used to support the Army urgent-need fielding request.

[1] Bacillus subtilis var. niger, a BW agent simulant.